

## REMARKS

Claims 3 to 7 and 9 to 17 are pending in the application. Original claims 1, 2 and 8 have been canceled, original claims 3 to 7 have been amended, and new claims 9 to 17 have been added. New claim 9 is the sole independent claim upon which the remaining claims are either directly or indirectly dependent.

Claims 1 to 8 were rejected under 35 U.S.C. §102 (e) as being anticipated by U.S. Patent No. 5,983,073 to Ditzik. As to the claims now pending in the application, this rejection is respectfully traversed for the reason that Ditzik neither shows nor suggests the claimed invention.

The disclosed and claimed invention relates to a relay apparatus for allowing various kinds of communication means to be used under a common environment. The relay apparatus comprises external connection interface means to which a plurality of communication means are connected and which individually interfaces with the communication means, and common control means which is commonly provided for the plurality of communication means and controls to perform communication by using one of the plurality of communication means connected to the external connection interface means in accordance with operation by a user. An important feature of the common control means is that the relay apparatus acquires, from the respective communication terminals mounted thereon, various kinds of communication information stored in the respective communication terminals, i.e., attribute data having telephone numbers as keys such as telephone directory, Internet addresses, and their attribute data, and registers these pieces of information in a database.

As shown in Figure 1, portable terminals 1 and 2 perform radio communication through a radio network 5, while the fixed telephone terminal 3 is connected to the telephone line 4 which, in turn, is connected to a telephone network 6. The relay apparatus 10 allows the user to use the respective communication means including the portable terminals 1 and 2, fixed telephone terminal 3, telephone line 4, and the like with common operation. This also makes possible collective management and common use of communication information used in the respective communication means.

The relay apparatus 10 includes an external connection interface (I/F) section 11, relay section 12, and common terminal section 20. The external connection I/F section 11 independently controls each of the communication means such as communication terminals and communication line connected to the relay apparatus 10. The external connection I/F section 11 includes separate interface sections for the respective communication means. In the example shown, the external connection I/F section 11 includes a terminal interface section 11A for controlling the portable terminal 1, a terminal interface section 11B for controlling the portable terminal 2, a terminal interface section 11C for controlling the fixed telephone terminal 3, and a line interface section 11D for controlling the telephone line 4. The relay section 12 relays/connects the respective terminal I/F sections 11A to 11C of the external connection I/F section 11 and the line I/F section 11D to the common terminal section 20 commonly used by the respective communication means. In the example shown, each of the I/F sections 11A to 11D and the common terminal section 20 can be one-to-one connected through a signal line 20C, the plurality of I/F sections 11A to 11D and the common terminal section 20 can be many to one connected through a signal line 20A, or the I/F sections 11A to 11D can be connected to each other.

The common terminal section 20 is commonly provided for the respective communication means connected to the external connection I/F section 11, and performs various kinds of communication such as speech communication, electronic mail communication, and image communication. The common terminal section 20 includes a communication control section 21 connected to the external connection I/F section 11, a transmission/reception section 22 connected to the communication control section 21, a database (to be referred to as a DB hereinafter) 23 connected to the communication control section 21, a storage section 24, an operation input section 25, a window display section 26, and an image sensing section 27. The communication control section 21 is a common function processing section for controlling various kinds of communication performed by the respective communication means. The communication control section 21 is comprised of a microprocessor such as a CPU (Central Processing Unit), its peripheral circuits, and a communication circuit such as a speech

communication circuit. The communication control section 21 controls the respective sections of the relay apparatus 10 by executing programs stored in advance in the storage section 24. The communication control section 21 includes a call control section 21A for controlling various kinds of communication calls, a speech communication processing section 21B which is connected to the transmission/reception section 22 to perform speech communication, a mail processing section 21C for exchanging electronic mail, an image processing section 21D for performing image communication, a database management section 21E for managing the database 23, and a response determination section 21F for determining whether to make a response to an incoming call. The call control section 21A, in particular, performs call control for the respective communication means on the basis of specifications (interface information) set in advance by the user in accordance with the types and models of the respective communication means. The specifications of the respective communication means may be stored in the database 23 in advance, or may be externally stored in the database (DB) 23.

The transmission/reception section 22 is a speech transmission/reception interface section by which the user performs speech communication through the speech communication processing section 21B. The transmission/reception section 22 includes a right earphone 22A and left earphone 22B as reception means, and a microphone 22C as a transmission means.

The DB 23 commonly performs collective management of communication information such as communication partner information and log information used for communications in the respective communication means. The following pieces of information are collected from the respective communication terminals and collectively managed: the cell phone numbers or mail addresses of communication partners which are obtained from the portable terminals 1 and 2, the fixed telephone numbers or electronic mail addresses of communication partners which are obtained from the fixed telephone terminal 3, and communication partner information such as the names of communication partners. In addition to information associated with communication partners, multimedia information such as mail, image data, and speech data exchanged with the communication

partners, and communication log information are collectively managed.

The contents of various kinds of filter settings are registered in the DB 23 in accordance with setting operation by the user. The information set by this filter setting for each telephone number includes limitations on origination and utilization time, call rejection and call limitations, association with a ringing tone, termination propriety information, and the like. Termination propriety information, in particular, is used to determine whether to respond to a new incoming call from another communication partner during speech communication. In addition, user information about the user is also managed, which includes, for example, the cell phone number, fixed telephone number, cell phone mail address, and electronic mail address of the user who uses this relay apparatus.

The communication information held in each communication terminal is loaded into the relay apparatus 10 and stored in the DB 23 when each communication terminal is connected to the relay apparatus 10. Communication information about a desired communication partner is retrieved from the DB 23 as needed to be used in the communication control section 21 or displayed on the window display section 26. The storage section 24 is a memory which stores control information used for control processing in the communication control section 21. In addition to the control information, the storage section 24 stores programs, format data, and the like.

The operation input section 25 is an input interface section for detecting operation by the user. The operation input section 25 includes a keyboard having various keys such as dial keys, touch keys arranged on the window display section 26, and a pointing device such as a mouse.

The window display section 26 is a window display device such as an LCD device, on which various kinds of information are displayed, including communication information such as mail contents and image data handled by the communication control section 21, communication information read out from the DB 23 in association with a communication partner, and management information in the relay apparatus 10.

The image sensing section 27 is a compact camera which senses an image of the user when image communication such as videophone communication is

performed using a moving or still image.

The operation of the relay apparatus according to the invention allows succeeding calls to be received without disconnecting the first call. Moreover, the user can perform a three-way call operation after receiving the second call.

Ditzik discloses modular notebook and PDA computer systems for personal computing and wireless communications. More particularly, Ditzik discloses a small light weight modular microcomputer based computer and communications system, designed for both portability and desktop uses. As shown in Figures 1 to 3, the system make use of a relative large flat panel display device assembly 2, an expandable hinge device 10, battery power source 9, keyboard assembly 16, and wireless communications devices 32, 51. The system is capable of bi-directional realtime communications of voice, audio, text, graphics and video data. Both wire-based or wireless communications methods and devices are implemented. Wireless communications devices may include one or more telephone-like handsets 14 (Figures 2 and 3) and/or earset 34 (Figure 3). The wireless communication devices may include one or more antennae 32. Systems can be configured in a portable arrangement similar to conventional notebook computers, but can be quickly and easily disassembled and re-assembled for office desktop uses. Systems may consist of a base computer unit 100 (Figure 3(b)) comprising wireless communication devices may act as a relay station relaying voice and other data between the handset or earset and external wide area communications networks. The system may be capable of performing, personal digital assistant (PDA), cellular telephone, conventional notebook computer, desktop computer functions.

The Examiner specifically cites Figure 7 of Ditzik in support of his rejection. Figure 7 is a block diagram of the system which comprises a microprocessor 38 that controls most of the system elements. A computer system I/O bus 60 is shown interfacing several system elements. The microcomputer system may also consist of one or more I/O port means 62. A PC Card interface 27 may be embodied for bus expansion, extended memory or other added circuitry having access to the main bus 60. A mass memory device 42 may be embodied in the system, which typically is a magnetic disk memory hard drive. Other devices

may be connected to the computer system, including a smart card interface 46 and keyboard 16. A touch panel and pen input means 7 may be embodied in the system, which may be separate or integrated. Other more traditional cursor control devices 56 may be embodied, such as a mouse, trackball, touch pad, or force transducer. Preferably, most of these components should be sufficiently small as to fit into relatively thin display assembly 2. The flat display panel device 2 is be interfaced to the system bus 60 through display controller circuitry 44. A digital signal processing (DSP) co-processor 48 may accept data from many sources including a microphone 36 and video data source 43. The DSP or microprocessor may output signals to one or more audio speakers, as shown as 10A and 10B. Video data may be in either analog or digital form. Microphone 36, and speaker(s) may be embodied in the handset or earset of the previous figures. Video data may be pre-processed by a the DSP. Video sources may include output from video cameras, VCR, broadcast TV, satellite TV or cable TV.

External communication means 54 may be connected to the bus, which may be capable of fast two way data transfers. The Examiner specifically cites column 12, line 50, where it is stated that “communications means 54 should be capable of controlling communications to and from a plurality of wire and wireless communication systems”. As Ditzik goes on to explain, these include wire based telephone means 53 and wireless communication means 51. The system may include an antenna means 32 for transmitting and receiving electromagnetic radiated signals. External communication means may be connected to one or more information or communication service providers. These service providers may include telephone services (RBOCs, LEC), on-line computer networks, Internet service providers, cable MSOs and/or long distance telephone firms. They also may include cable TV companies, satellite TV service, and LAN/WAN communication network providers. The external I/O port means 62 may be connected to a Universal Series Bus (USB) and/or an IEEE 1394 (Firewire.RTM.) type I/O bus.

From the foregoing, it is clear that the Ditzik modular computer and communication system and the disclosed invention differ in purpose, function and construction. To emphasize this, new independent claim 9 recites a relay

apparatus for connection to a plurality of communication devices including portable terminals, fixed telephone terminals and a telephone line connected to a telephone network. With reference to Figure 1, this relay apparatus comprises “an external interface (I/F) section [11] which independently controls each of the plurality of communication devices and includes separate interface sections [11A, 11B, 11C, 11D] for respective ones of the plurality of communication devices”. The claimed relay apparatus further comprises “a common terminal section [20] commonly provided for the respective ones of the plurality of communication devices connected to the external I/F section [11] performing multiple kinds of communication including speech communication, electronic mail communication and image communication, the common terminal section including a control section [21] connected to the external I/F section and including a call control section [21A] for controlling various kinds of communication calls, a speech communication processing section [21B] for performing speech communication, a mail processing section [21C] for exchanging electronic mail, an image processing section [21D] for performing image communication, a database management section [21E], and a response determination section [21F]”. The common terminal section 20 further includes “a transmission/reception section [22] connected to the speech communication processing section [21B] of the communication control section [21], a database (DB) [23] connected to the communication control section [21] and managed by the database management section [21E], a storage section [24] storing programs executed by the common terminal section, and a window display section [26]”. The “call control section *performs call control for the respective ones of the plurality of communication devices on the basis of specifications set in advance in accordance with types and models of respective ones of the plurality of communication devices, said DB commonly performing collective management of communication information identifying communication partners, said DB having registered filter settings including limitations on origination and utilization time, call rejection and call limitations and termination propriety used to determine whether to respond to a new incoming call from another communication partner during speech communication, communication information held in each of said plurality of communication devices being stored*

*in said DB when each communication device is connected to the relay apparatus"*  
(emphasis added).

In view of the foregoing, it is respectfully requested that the application be reconsidered, that claims 3 to 7 and 9 to 17 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

A provisional petition is hereby made for any extension of time necessary for the continued pendency during the life of this application. Please charge any fees for such provisional petition and any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041.

Respectfully submitted,



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